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Module 12: Urban Wildlife

Urban EcoLab

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M12 Lesson 4 Outline

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LESSON #4: Coyote Biodiversity

OVERVIEW:

The purpose of this lesson is to facilitate student acquisition of background knowledge on topics related to human and coyote impacts on biodiversity. This will focus on how humans impact biodiversity in urban areas, how coyotes fit into the urban food web, and how the two species interact with one another. Students will research and present their findings via a Project Based Learning (PBL) poster.

SUB-QUESTIONS:

- What are the characteristics of animals who are successful in urban areas?
- How have humans changed the environment to affect biodiversity?
- What is a food web?
- How do coyotes contribute to urban food webs?
- What affect to humans have on urban food webs?

WAYS OF KNOWING URBAN ECOLOGY:

<i>Students will...</i>	
<u>Understand</u>	. Learn about animals that live in urban environments and ways that they interact with humans.
<u>Talk</u>	. Research in sub-groups human and coyote effects on urban food webs.
<u>Do</u>	. Organize material for presentation to a larger audience.
<u>Act</u>	. Create a poster and present it to peers.

SAFETY GUIDELINES:

None for this lesson.

PREPARATION:

Time: Four (4) class periods (50 mins ea).

MATERIALS:**Activity 4.1 (1st class): PowerPoint – Urban Biodiversity**

- Laptop
- Projector & Screen
- Instructional PowerPoint Slides – Urban Biodiversity
- Student Handout for note-taking (M12_L4_A4.1_SH1)
- Wipeboards and markers for food web design

Activity 4.2 (2nd class; 20 minutes): Video and PowerPoint – Coyote Biodiversity

- Laptop
- Projector & Screen
- YouTube Video: Coyotes: Kill Them or Co-Exist?
<https://www.kcet.org/shows/socal-connected/coyotes-kill-them-or-coexist>
- Instructional PowerPoint Slides – Urban Biodiversity

Activity 4.3 (remainder of 2nd class and entire 3rd class): Activity – Build a Biodiversity Poster

- **Assign students to 10 groups**
- Student laptops or access to computer lab for research
- Poster board – large
- Access to printers for printing all poster materials
- Glue and/or tape
- Construction paper for creative display
- Markers, colored pencils and/or crayons
- Pens/pencils

Activity 4.4 (4th class): Biodiversity Poster Presentations

- Completed Posters
- Easels for Poster Presentations

Instructional Sequence (4 class periods):**Activity 4.1 (1st class): PowerPoint – Urban Biodiversity**

- Step 1: Present introductory PowerPoint slides to students (first 12 slides). These will introduce students to urban biodiversity, human effects on biodiversity and urban food webs.
- Step 2: Have students take notes as they will be using this to start their posters.
- Step 3: PowerPoint slides will be interactive allowing students to demonstrate their knowledge of urban animals and draw out food webs, either with their groups on individual wipe boards or around the room on classroom wipeboards.
- Step 4: Allow time for questions and clarify understanding and any misconceptions.

Activity 4.2 (2nd class; 20 minutes): Video and PowerPoint – Coyote Biodiversity

- Step 1: Present introductory PowerPoint slides to students (remainder of slides), concluding with the video about coyote co-existence. These will introduce students to coyote survival in urban areas and ways in which they impact biodiversity in addition to introducing content that will be further explored in lesson 5 on how humans and coyotes interact.
- Step 2: Have students take notes on any topics they find interesting as these will be helpful in designing their posters.
- Step 3: Allow time for questions and clarify understanding and any misconceptions.

Activity 4.3 (remainder of 2nd class and entire 3rd class): Activity – Build a Biodiversity Poster

- Step 1: Divide students into 10 groups.
- Step 2: Explain to them that they will be creating an informational poster about urban biodiversity. For the first half of the poster,

they will propose something that humans can do to help increase urban biodiversity. Which animals would they impact? How would you get people on board with this plan? Who would be the affected parties? For the second half of the poster, choose a topic about coyotes that has interested you during this module. Give the necessary information and then explain how this adaptation has allowed coyotes to be successful in urban areas. What can humans do to ensure that this continues?

- Step 3: Students can gather at their laptops/computer stations to begin research/printing out their visual aids.

Activity 4.4 (4th class): Biodiversity Poster Presentations

- Pre-Lesson: Have the easels and posters set up ahead of time.
- Once posters have been created, the students can share their work!
- Each group should have 3-4 mins to present their posters, allowing 1-2 minutes for Q&A.
- Conclusion / Wrap-up / Exit Activity: Audience Q&A
- Note: It is always a nice idea to invite the Campus Administrators (Principal, Asst Principal), so they can see the great work students are doing in science!
- Note: It is also a nice idea to take pictures and post them to a classroom blog or the classroom web site to showcase student work.

Summary Notes/Conclusion: By the end of Lesson 4, students will be able to (SWBAT):

- Understand many topics related to urban biodiversity, such as food webs in urban areas and effects of humans and coyotes on those food webs
- Construct and analyze a food web
- Take notes during video and PowerPoint presentations

- Conduct research on various assigned topics
- Work as a team to successfully complete a project
- Create a research poster about a topic
- Present work to a larger audience